

No. 22,810

IN THE

**United States Court of Appeals**  
**For the Ninth Circuit**

HARLAN P. HAMLOW and HENRY RAPOPORT,  
*Plaintiffs-Appellants,*  
VS.

SCIENTIFIC GLASS APPARATUS CORP., a corpora-  
tion and RINCO INSTRUMENTS COMPANY, INC.,  
a corporation,  
*Defendants-Appellees.*

**Appeal from the United States District Court  
for the Central District of California**

**BRIEF FOR DEFENDANTS-APPELLEES**

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## BRIEF FOR DEFENDANTS-APPELLEES

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### INTRODUCTION

The parties will be referred to herein as "plaintiffs" or "defendants", as in the trial court. The plaintiffs are the appellants herein, and the defendants are the appellees.

For the Court's convenience, defendants will use the same record designation selected by plaintiffs, viz., "T." for the clerk's transcript or original papers filed in the District Court, and "R." for the reporter's transcript of the trial proceedings.

### COUNTERSTATEMENT OF THE CASE

This is an action for the infringement of the single claim of the Hamlow and Rapoport patent No. 3,219,099.

“The patent in suit is directed to a rotary evaporator, which is a piece of laboratory equipment used in chemistry laboratories for evaporating liquids. In general, such rotary evaporators comprise a glass flask into which the liquid to be evaporated is placed. A hollow shaft having a tapered end fits into the flask in airtight engagement therewith. The other end of the shaft has an airtight rotary engagement with a stationary glass tubing which is connected to a source of low pressure such as a vacuum pump. In operation, the flask and shaft are rotated as a unit about the axis of the shaft so that the liquid in the flask will form a thin film on the inside of the flask. Heat is applied to the flask and the evaporated liquid is drawn off through the shaft and the stationary glass tubing.”

(Finding of Fact 14, T. 51.)

Rotary evaporators as just described were well known prior to plaintiff's invention. (Finding of Fact 15, T. 51.)

The history of rotary evaporators has a relatively recent origin, a rotary evaporator being first suggested in 1950 in an article by Craig. (Exhibit D.) In the Craig article, the hollow rotating shaft was made of glass and had one end thereof in airtight engagement with a glass flask. The other end of the hollow shaft and the stationary glass tubing were connected together by a ball-and-socket joint which was greased to make it airtight. Dr. Dreiding was questioned (R. 350-355) as to the construction of the Craig device with relation to the elements and limitations of the claim in suit. To summarize his testimony, the

claim is set forth below with those portions of the claim not found in Craig indicated in brackets and bold face print and with the italicized portions added to the claim to describe the Craig device. Dr. Dreiding testified that the Craig article (Exhibit D) is an:

“Apparatus for separating and removing volatile substances from a composition, in combination

a housing,

a shaft made of [**polyfluorovinyl resin**] *glass* rotatably mounted in said housing and with both of its ends extending beyond the limits of said housing,

said shaft having a passage of substantially uniform diameter extending axially through the entire length thereof,

said shaft having one end thereof removably securing a flask in airtight engagement for rotation therewith,

said shaft having its opposite end formed as the ball portion of a ball and socket joint,

a separately mounted glass fixed member, having an axial passage therethrough of substantially the same diameter

terminating with the socket portion of the ball and socket joint rotatably receiving and seating the said ball portion of said shaft in airtight [**self-lubricating**] engagement and with their respective passages in alignment,

exhaust means communicating with the passage in said fixed member connected to a source of low pressure, and

drive means mounted [**in**] outside said housing for rotating said shaft.”

As is abundantly clear, the difference between the claimed invention and the first prior art rotary evaporator is that *the Craig glass shaft with its ball member of a ball-and-socket joint on one end thereof has been replaced by a correspondingly shaped Teflon shaft*. This in turn changes the ball-and-socket joint from a greased glass-to-glass connection to a self-lubricating Teflon-to-glass connection.

(The Craig device also differs from the claimed invention in that the drive means, or motor, of Craig is *outside* the housing, rather than *inside*, as specified in the claim, but plaintiffs do not assert this to be a difference of any substance.)

Plaintiffs made this change for the following reasons. Glass-to-glass rotating connections, such as in the Craig device, require the use of a grease lubricant in order to obtain an airtight seal. However, the use of such grease can be undesirable because the grease will be exposed to and contaminate the substance inside the device which is being evaporated. (Patent in suit, Exhibit 1.) Plaintiffs wished to avoid the use of contaminating grease (R. 116) in their rotary evaporator and achieved this by using a Teflon shaft. With its Teflon-to-glass connections to the flask and fixed glass member, because a Teflon-to-glass connection is self-lubricating and requires no other lubricant to form an airtight seal (R. 21).

Plaintiffs also desired to prevent any contamination of the material being evaporated which might result from corrosion. Accordingly, their rotary evaporator was designed not to have any metal parts exposed to the material being evaporated. (R. 25.)

Plaintiffs' rotary evaporator does work. However:

“The combination of elements set forth in the claim of the patent in suit does not accomplish any result that is unusual, unobvious, surprising or unexpected. Instead, the results of such combination of elements are those which arise by virtue of the inherent properties of glass and Teflon and glass-Teflon combinations, which properties were well known at the time of the invention of the patent in suit.”

(Finding of Fact 27, T. 55.)

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### SUMMARY OF ARGUMENT

The main question presented here on appeal can be stated as follows:

Is it patentable invention to modify an old rotary evaporator by making the hollow shaft out of Teflon, instead of glass, in order to obtain the well-known advantages of Teflon?

The prior art shows plainly that it is not. After the original 1950 disclosure by Craig of a rotary evaporator, the prior art showed: the use of a Teflon-glass ball joint in a rotary evaporator (but not in a location designed to prevent contamination) with a recognition that it formed a self-lubricating airtight seal; the recognition that grease in a glass-to-glass connection could be a source of contamination and that this could be overcome by use of a Teflon-to-glass connection; the use of a Teflon-Teflon ball joint in a rotary evaporator (at the same location as in the patent in suit) to form a self-lubricating airtight seal; the construction of rotary evaporators without any metal parts therein that could be subject to corrosion.

The patent in suit shows merely an obvious assemblage of old concepts and elements to achieve expected results.

Further, the patent is invalid because of the public use of plaintiffs' devices at the University of California more than one year prior to the filing of the application.

There is no infringement here. In addition to the reasons assigned by the trial court, defendants do not make or sell the entire combination of elements set forth in the claim. There is no evidence that the entire combination has been used. Accordingly, there can be no liability for contributory infringement or for inducing to infringe, since there is no proof of direct infringement.

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### ARGUMENT

**THE CLAIM OF THE PATENT IN SUIT DOES NOT MEET THE STATUTORY TEST OF VALIDITY SET FORTH IN 35 U.S.C. § 103.**

Plaintiffs admit in their opening brief (page 11) that the "differences over the prior art do not appear to be giant strides". With this we agree. In view of the prior art here, we submit that the differences are virtually non-existent.

The principal prior art in this case is as follows:

The Craig rotary evaporator

Teflon-glass laboratory stopcocks

Buchler patent No. 2,865,445

The Hornmuth (Bernauer) rotary evaporator

### **The Craig rotary evaporator**

This device, Exhibit D, has already been discussed above. Again, the only difference between the claimed invention and Craig is the use of a Teflon (instead of glass) shaft with a self-lubricated Teflon-glass ball-and-socket joint. It should also be noted that the Craig device does not have any metal parts which are exposed to the inside of the device and which might be subject to corrosion.

The Craig article, Exhibit D, was not considered by the Patent Office.

### **Teflon-glass laboratory stopcocks**

These devices are shown in the Birchall patent No. 2,876,985 (Exhibit A-6) and in the 1956 advertisements of Fischer & Porter Co. (Exhibits S and T). Findings of Fact No. 18 (T. 52) summarizes the teachings of these stopcocks:

“The prior art Birchall patent No. 2,876,985 shows a laboratory stopcock having a tapered Teflon plug fitting in a tapered glass seat and rotatable therein. The Birchall patent specifically recognizes that rotating glass-to-glass connections require the use of grease or other lubricants which can cause contamination of fluids passing therethrough and that such contamination can be avoided by the substitution of a Teflon plug in place of the previously used glass plugs. The Birchall Teflon-glass stopcock is airtight and self-lubricating. The advertisements for these Teflon-glass stopcocks (Exhibits S and T) stress the points that there is no product contamination resulting from the use thereof, and that such devices may be used over a wide range of temperatures.”

Thus, this prior art plainly teaches that contamination may result from a greased glass-to-glass connection, and that such contamination can be avoided by replacing one of the elements with Teflon.

Neither the Birchall patent nor the Fischer & Porter advertisements were considered by the Patent Office.

Plaintiffs attempt to avoid the disclosure of the Birchall patent by noting that it did not issue until some ten months after plaintiffs made their invention. This, of course, is true. Plaintiffs then argue, "Therefore regardless of what it shows it cannot speak as of the date of Plaintiffs' invention which was April 24, 1958 \* \* \*. Accordingly, it cannot be relied upon to invalidate the patent in suit under § 103". (Opening brief, page 30.)

No authority is cited for this statement of law. This is not surprising, because the statement is absolutely incorrect.

In the first place, the Birchall patent issued on March 10, 1959, over two years before plaintiffs filed their application. As such, the disclosure of the Birchall patent may be considered in determining whether or not the present patent in suit discloses an unobvious improvement, even if the Birchall invention was made after plaintiffs' invention. *Application of Foster*, 343 F.2d 980 (CCPA, 1965), cert. den. 383 U.S. 966 (1966).

In the second place, the application for the Birchall patent was filed on June 22, 1955, almost three years before plaintiffs' 1958 date of invention. In *Hazeltine Research Co. v. Brenner*, 382 U.S. 252 (1965), the Supreme Court ruled specifically that a patent speaks as of its

*filing date* and is part of the "prior art" at that time as that term is used in 35 U.S.C. § 103. Accordingly, the Birchall patent is prior art here for all purposes.

(It is noted that plaintiffs also dispose of the Ueberwasser patent No. 3,034,573 on the ground that it was based upon a French patent which issued in 1959 after plaintiffs' 1958 date of invention and that "therefore it cannot speak with respect to anything obvious at the time Plaintiffs made their invention, as required under § 103". (Opening brief, page 31.) However, the Ueberwasser patent No. 3,034,573 was filed on March 28, 1958, *before plaintiffs' invention*. Accordingly, under the specific ruling of *Hazeltine*, the Ueberwasser patent is prior art under § 103.)

It may be that plaintiffs' complete misunderstanding of the law on the applicability of prior art is the chief reason why this appeal has been pursued.

Plaintiffs also assert that laboratory stopcocks do not "relate to rotary evaporators and must therefore be considered non-analogous art" (Opening brief, p. 30.)

This contention is manifestly incorrect. Plaintiffs' Exhibit 9 is a catalog sheet for plaintiffs' commercial rotary evaporator. The front cover has a photograph of the rotary evaporator set up for operation, with two stopcocks being used. The price list on the rear of Exhibit 9 shows that the \$214.78 price for the apparatus includes a stopcock, and that for \$3.95 additional a "stopcock with Teflon plug instead of glass" will be supplied. If plaintiffs sell a Teflon plug stopcock with their rotary evaporator, how can they now assert that such stopcocks are "non-analogous"?

Furthermore, Dr. Rapoport, one of the co-inventors of the patent in suit, testified:

“Q. How long have you known of the use of stopcocks with Teflon plugs?

“A. Oh, ten years I would say.

“Q. That would take you back to 1957 or so?

“A. Yes.”

(R. 118.)

\* \* \*

“Q. What is the purpose of using a Teflon plug in a stopcock?

“A. To avoid lubricant that you would use if you had a glass on glass, that you would need if you had glass on glass.

“Q. Did you realize this back in 1957?

“A. Yes, this is well known.

“Q. Would that prevent contamination of products passing through the stopcock?

“A. Yes.

“Q. The same as in your device it prevents contamination of fluid passing through the Teflon shaft because there is no grease; is that correct?

“A. If the materials do not react with Teflon, and most materials do not, then there would not be any contamination from a Teflon plug in a glass barrel type stopcock.

“Q. Teflon is Teflon, is it not? The Teflon that would be used in the stopcock is the same material as the Teflon used in your rotary evaporator?

“A. That would be my assumption.”

(R. 121-122.)

**Buchler patent No. 2,865,445**

This patent to a rotary evaporator was considered by the Patent Office, and discloses a ball-and-socket rotary joint in which the ball member 29 is glass and the socket member 30 is Teflon. The Buchler patent states with reference to this Teflon-glass ball joint:

“\* \* \* member 30 may consist of plastic material, preferably tetrafluoromethane polymer ('Teflon') which has been found to give a smooth yet airtight seal against glass; the highly passive surface of this material, which appears to the touch as though coated with a film of oil, enables its use without any sealing compound when applied against a smooth-surfaced object.”

The Buchler patent was considered by the Patent Office. However, this patent does not discuss the problems of contamination in rotary evaporators and does not use the self-lubricating Teflon-glass ball joint for the prevention of contamination.

In 1954, when the Buchler patent was filed, it may be that Buchler did not recognize that lubricating grease could be a source of contamination in laboratory equipment or that his self-lubricating Teflon-glass ball joint could be used to avoid such problems. However, this concept was certainly recognized by Birchall in 1955 and was well known by 1957. (R. 121.)

**The Hormuth (Bernauer) rotary evaporator**

Many of the exhibits in the present case pertain to the rotary evaporator developed by Dr. Bernauer of Switzerland and manufactured by L. Hormuth Company of Germany.

The earliest prior art exhibit relating to this device is the German Gebrauchsmuster (utility model) No. 1,752,622 (Exhibit R), entered September 19, 1957 to L. Hormuth Company. The drawing from this patent is in Appendix C of plaintiffs' opening brief.

The Hormuth rotary evaporator has a hollow glass shaft g mounted for rotation with its lower end and making a tapered connection with the glass flask. A Teflon member h makes a non-rotating tapered connection to the upper end of the glass shaft g, and the upper end of the Teflon member h forms a ball received within the socket portion of fixed Teflon member j. Thus, the rotating ball joint of the Hormuth evaporator has a Teflon-to-Teflon contact. There are no metal parts subject to corrosion by the material being evaporated.

The next prior art reference to the Hormuth evaporator is found in the 1958 Houben-Weyl publication. (Exhibit P and translation, Exhibit P-1.) In a discussion of the operation of a rotary evaporator having a glass-to-glass ball-and-socket rotary joint, the Houben-Weyl publication states:

"An apparatus which, because of its simplicity, is very useful for the laboratory in the rotary evaporator." The principle is shown in Fig. 5.

"The liquid is evaporated from the round bottom flasks and can be added continuously from a dropping funnel. The flask b is rotated so that a thin layer of liquid with a large surface is formed. This film evaporates at a suitable temperature without boiling. *The weakest point is the balljoint bearing c as indicated by numerous suggestions for improvement in the literature. More recently the balljoint is made of*

*Teflon, which gives a tight joint and needs no lubrication.*<sup>2</sup>

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“<sup>2</sup>According to a private communication from K. Bernauer, Institute of Chemistry of the University of Zurich, this evaporator is manufactured in Germany by the firm of L. Hormuth, Propr. W. E. Vetter, Heidelberg, and in Switzerland by the firm of A. Dumas, Zurich.” (Emphasis added.)

Exhibit Q is a printed brochure of the Hormuth evaporator which was printed prior to August of 1859. (Finding of Fact 19 (T. 53).) This publication shows a photograph of the Hormuth rotary evaporator and states:

*“Teflon-Ball joint connection*

Between the intensity condenser and the rotating glass parts; tight without lubrication—resistant to high temperatures and to chemical reagents.”

The Hormuth rotary evaporator has also been used in this country more than a year prior to the filing date of the patent in suit, as set forth in Finding of Fact 20 (T. 53):

“In the summer of 1959, Dr. Michael P. Cava, then a Professor of chemistry at Ohio State University, Columbus, Ohio, was at the University of Zurich in Zurich, Switzerland. While there, he saw in Dr. K. Bernauer’s laboratory a rotary evaporator as described in Finding No. 19, and arranged for the purchase of one of such evaporators from the L. Hormuth Company. Such evaporator was received by Dr. Cava at Ohio State University no later than January of 1960. Such evaporator was as shown and described in the German Gebrauchsmuster No. 1,752,622 (Exhibit R) and the L. Hormuth brochure (Exhibit Q). This Hormuth evaporator was put to public use at Ohio State University more than one year prior to the

August 11, 1961 filing date of the patent here in suit. The Hormuth evaporator was used extensively for a period of several years. Dr. Cava recognized that the use of grease or other lubricant could result in product contamination and for that reason no such contaminating grease or other lubricant was ever used on the Teflon ball joint connection or the glass shaft-to-flask connection of the Hormuth evaporator.’’

The trial court compared the Hormuth rotary evaporator with plaintiffs’ device and found as follows in Finding of Fact 21 (T. 54):

“The Hormuth evaporator, illustrated and described in Exhibits P, Q and R, and used at Ohio State University, is an evaporator in which there are no metal parts in contact with the fluids therein and is accordingly corrosion-free, and also is a rotary evaporator in which no contaminating grease or other lubricant was used. Such evaporator fulfills the functions that were stated by plaintiffs to be new in their rotary evaporator at pages 44, 45 and 66 of the file wrapper of the patent in suit (Exhibit K).’’

Although the Hormuth evaporator uses a ball joint in which both members are made of Teflon, whereas the patented device uses a ball joint in which one member is Teflon and the other is glass, the trial court found that a Teflon-glass ball joint “is the full equivalent of the Teflon-Teflon ball joint of the Hormuth evaporator insofar as its use in a rotary evaporator is concerned.” (Finding of Fact 22, T. 54.)

Thus, there are three *different* ways in which the Hormuth rotary evaporator forms a part of the prior art. It has been patented in 1957 (Exhibit R), it has been dis-

closed in publications printed in 1958 (Exhibit P) and 1959 (Exhibit Q), and it has been in prior public use in this country by Dr. Cava (Finding of Fact 20).

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**THE GERMAN GEBRAUCHSMUSTER NO. 1,752,622 IS A PATENT OF A FOREIGN COUNTRY WITHIN THE MEANING AND INTENT OF 35 U.S.C. §§ 102(a) AND 102(b) AND IS PRIOR ART IN THIS ACTION TO BE CONSIDERED IN A DETERMINATION OF OBVIOUSNESS UNDER 35 U.S.C. § 103.**

As plaintiffs correctly point out, there is no holding in this Circuit that a German Gebrauchsmuster is a patent within the meaning of § 102. Neither is there a holding to the contrary. The matter simply has not come up before this Court.

However, this matter has been considered elsewhere.

On November 2, 1965, Volume 820, Number 1, of the Official Gazette of the United States Patent Office (Exhibit Y) stated:

“German Utility Model (Gebrauchsmuster)

As Reference

“The German law, in addition to the regular patent law, provides for short term exclusive rights in new articles of manufacture (processes and compositions of matter being excluded) which might be of a lower order of inventive merit than is required for the longer term patent. These go by the name of ‘Gebrauchsmuster’ which word is customarily translated as ‘utility model’ and might also be translated as ‘useful article.’ They are issued without search and the specifications and drawings, while available to the

public, are not issued in printed form. Since copies are not placed in the Examiner's search files, questions relating to their use have been infrequent. Recent events, however, have so increased the probability of a German Gebrauchsmuster coming to the attention of the Examiner that a general statement as to their status and use appears desirable.

\* \* \*

"Inasmuch as the full specifications are not issued in printed form, they cannot be used as printed publications, in conformity with decisions of the courts and of the Patent Office that manuscript specifications of issued patents and of applications laid open for public inspection, are not printed publications.

"*Prior patents.*—The Examiners may use the Gebrauchsmuster, however, as a prior patent, effective as of the date of registration, in the same manner as they would use the patents of countries which do issue specifications in printed form; for example, as they may use a Spanish or South African patent which has been brought to their attention, or a Belgian patent for the period of several years after it is granted and before the specification is issued in printed form.

\* \* \*

"Section 901.05(b) is amended by adding the following after the second paragraph on page 139:

"German Utility Models (Gebrauchsmuster) may be used as references as prior patents, but not as prior printed publications, effective as of their registration date. When necessary, the Librarian will obtain the complete text of the specification from the German Patent Office. A file of such copies is maintained in the Scientific Library.

"Richard A. Wahl,  
Assistant Commissioner."

German Gebrauchsmusters have also come under judicial scrutiny in *American Infra-Red Radiant Co. v. Lambert Industries, Inc.*, 8 Cir. 1966, 360 F.2d 977 at 991 through 994. The court discussed in great detail the nature and effect of a German Gebrauchsmuster and concluded that:

“\* \* \* It is an important part of the German patent system. It has all of the attributes normally attributed to a patent which include an application setting forth claims, protection granted by the Government for a limited time, a right of action in the inventor to protect the invention against infringement, notice to the public in an official publication, and availability to the public of the specifications and claims. Furthermore, the Gebrauchsmuster falls within the general definition of ‘patent’ in that it does command a sovereign grant of right of exclusive use for limited periods.”

The Court then held that a German Gebrauchsmuster is a foreign patent within the purpose of 35 U.S.C. § 102 (d). Since there is no difference between §§ 102 (a), 102 (b) and 102 (d) in language, each referring to an invention “patented \* \* \* in \* \* \* a foreign country”, the reasoning of *Infra-Red* applies equally to each section. We submit that this Court should so hold and rule that a German Gebrauchsmuster is a foreign patent within the meaning of §§ 102(a) and 102(b).

Such a ruling would thus establish the German Gebrauchsmuster No. 1,752,622 as prior art. Since the date of this patent is in 1957, prior to any date of plaintiffs’ invention, it would obviously be prior art under § 103.

**THE CLAIM OF THE PATENT IN SUIT IS PLAINLY OBVIOUS  
IN LIGHT OF THE PRIOR ART.**

As set forth above, the difference between the claimed subject matter of the patent in suit and the 1950 Craig device (Exhibit D) is that Craig uses a glass shaft with a greased glass-to-glass ball joint, whereas the patent in suit uses a Teflon shaft with a self-lubricating Teflon-to-glass ball joint.

In 1954 (the filing date), Buchler used a Teflon-glass ball joint in a rotary evaporator to obtain a self-lubricating airtight seal.

In 1955 (the filing date), Birchall knew that grease in an all-glass stopcock could result in contamination and that this could be eliminated by replacing the glass plug with a Teflon plug. This concept and expedient was well known by Dr. Rapoport and others by 1957.

In 1957, the Hormuth evaporator used an all-Teflon ball joint in a rotary evaporator, at the same point as such ball joint is located in the patent in suit, to give an airtight joint without lubrication. This was also pointed out in 1958 in the Houben-Weyl publication (Exhibit P). A Teflon-Teflon ball joint is the full equivalent of a Teflon-glass ball joint insofar as their use in rotary evaporators is concerned.

Thus, plaintiffs did not invent the basic combination. Craig did. They did not discover that grease in a glass-to-glass joint could cause contamination and that this could be avoided by making a Teflon-to-glass joint. Birchall did. They did not invent a self-lubricating Teflon-glass ball joint. Buchler did. They were not even the first to use a self-lubricating ball joint using a Teflon member at

the upper end of the shaft. The Hormuth evaporator was the first.

Neither were plaintiffs the first to invent a corrosion-and-contamination-free rotary evaporator.

“The Hormuth evaporator, illustrated and described in Exhibits P, Q and R, and used at Ohio State University, is an evaporator in which there are no metal parts in contact with the fluids therein and is accordingly corrosion-free, and also is a rotary evaporator in which no contaminating grease or other lubricant was used. Such evaporator fulfills the functions that were stated by plaintiffs to be new in their rotary evaporator at pages 44, 45 and 66 of the file wrapper of the patent in suit (Exhibit K).”

(Finding of Fact 21, T. 54.)

What, then was left for plaintiffs to invent? In their opening brief they suggest that their invention is unobvious because their Teflon shaft extends down and makes a tapered Teflon-to-glass connection with the glass flask. However, if this is their invention they do not even claim it. The claim states only that the shaft has “one end removably securing a flask in airtight engagement for rotation therewith.” This does not specifically define a tapered Teflon-to-glass joint.

Even if the claim had defined such a specific structure, Birchall shows a tapered Teflon-to-glass joint in a stop-cock. The Hormuth evaporator shows a tapered Teflon-to-glass joint between the Teflon ball joint member h and glass shaft g.

As is plain, the patented device is a completely obvious assemblage of well-known parts to obtain well-known results. Nothing unexpected or unusual has been achieved.

“The combination of elements set forth in the claim of the patent in suit does not accomplish any result that is unusual, unobvious, surprising or unexpected. Instead, the results of such combination of elements are those which arise by virtue of the inherent properties of glass and Teflon and glass-Teflon combinations, which properties were well known at the time of the invention of the patent in suit.”

(Finding of Fact 27, T. 55.)

In light of these disclosures of the prior art the trial court found (Findings of Fact 24, 25 and 26, T. 55):

“24. In view of the prior art in this case, and particularly the Hormuth evaporator and the Birchall patent, it would have been obvious to one of ordinary skill in the laboratory apparatus art at the time of the invention of the patent in suit to use self-lubricating Teflon-glass members in order to achieve an airtight joint and to avoid contamination which would result from the use of grease or other lubricants that might be required in a corresponding glass-to-glass joint.

“25. In view of the teachings of the prior art, and in particular of the Hormuth evaporator and the Birchall patent, it would have been obvious to one of ordinary skill in the laboratory apparatus art at the time of the invention of the patent in suit to substitute a Teflon shaft for the glass shaft of Craig (Exhibit D) so that such shaft would make a tapered Teflon-to-glass connection with the flask (as in Birchall) and would have a ball joint connection to the stationary glass tubing (as in Hormuth), in order to provide for a non-corrosive evaporator having self-lubricating connections.

“26. In view of the teachings of the prior art, and particularly in view of Craig, Hormuth and Birchall,

it would have been obvious to one of ordinary skill in the laboratory apparatus art at the time of the invention of the patent in suit to make a non-corrosive and lubrication-free rotary evaporator as set forth in the claim of the patent in suit.”

These findings are manifestly correct and the determination that the patent is invalid as obvious should be here sustained.

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**THE PRIOR PUBLIC USE OF THE HORMUTH ROTARY EVAPORATOR BY DR. CAVA INVALIDATES THE PATENT UNDER 35 U.S.C. §102(b).**

As was found by the court below, in Finding of Fact 20 (T. 53):

“In the summer of 1959, Dr. Michael P. Cava, then a Professor of chemistry at Ohio State University, Columbus, Ohio, was at the University of Zurich in Zurich, Switzerland. While there, he saw in Dr. K. Bernauer’s laboratory a rotary evaporator as described in Finding No. 19, and arranged for the purchase of one of such evaporators from the L. Hormuth Company. Such evaporator was received by Dr. Cava at Ohio State University no later than January of 1960. Such evaporator was as shown and described in the German Gebrauchsmuster No. 1,752,622 (Exhibit R) and the L. Hormuth brochure (Exhibit Q). This Hormuth evaporator was put to public use at Ohio State University more than one year prior to the August 11, 1961 filing date of the patent here in suit. The Hormuth evaporator was used extensively for a period of several years. Dr. Cava recognized that the use of grease or other lubricant could result in product contamination and for that reason no such

contaminating grease or other lubricant was ever used on the Teflon ball joint connection or the glass shaft-to-flask connection of the Hormuth evaporator.”

Such prior public use is a bar to a patent issued on an application filed more than one year later, under 35 U.S.C. § 102(b), whether the patent be to the same exact thing or to obvious improvements thereon which add nothing of a patentable nature.

*Cataphote Corporation v. De Soto Chemical Coatings, Inc.*, 356 F.2d 24, 27 (9th Cir. 1966);

*Tool Research and Engineering Corp. v. Honcor Corp.*, 367 F.2d 449 (9th Cir., 1966).

“\* \* \* Likewise where an article is sold, there is a sale or public use of the article itself and of all improvements on the thing which would be obvious to one skilled in the art. \* \* \*”

It is quite plain that the physical differences between the patented and Hormuth rotary evaporators are indeed trivial and minor and add nothing which was patentable. The ungreased self-lubricating Teflon-glass ball joint of the patent is the full equivalent of the Hormuth ungreased self-lubricating Teflon-Teflon ball joint of Hormuth. The Teflon member h of Hormuth makes a tapered connection with glass shaft g which in turn is connected in airtight and ungreased engagement with the glass flask, whereas in the patent the Teflon shaft makes an ungreased tapered connection with the glass flasks.

Stated in a different way, the difference between the Hormuth and patented devices is that in the patented device the Teflon member h of Hormuth is made longer so that it connects directly with the flask.

As is the patented device, the Hormuth evaporator is an evaporator in which there are no metal parts in contact with the fluids therein and is accordingly corrosion-free. As with the patented device, the Hormuth evaporator used no contaminating grease or other lubricant. The Hormuth evaporator fulfills all functions that were stated by plaintiffs to be new in their rotary evaporator during the prosecution of their patent. (Finding of Fact No. 21, T. 54.)

The lengthening of the Teflon member h of Hormuth to connect directly to the flask, and the substitution of an equivalent Teflon-glass rotary ball joint for the Hormuth Teflon-Teflon rotary ball joint are obvious variations of the Hormuth device.

Accordingly, the prior public use in this country of the Hormuth rotary evaporator invalidates the claim of the patent in suit.

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**THE MOST PERTINENT PRIOR ART WAS NOT  
CONSIDERED BY THE PATENT OFFICE.**

The statutory presumption of validity of the patent in suit is clearly overcome in this case.

In plaintiffs' opening brief, at page 7, it is stated that "nearly all of the art relied upon herein was present and considered" by the Patent Office and that "the only alleged reference which was not considered by the Patent Office and which is here relied upon both in the trial court's decision and by Defendants, is the so-called Bernauer Gebrauchsmuster."

These statements are completely incorrect.

The Craig publication (Exhibit D) is relied upon in Findings of Fact 17, 25 and 26.

The Birchall Teflon-glass laboratory stopcock (Exhibits A-6, S and T) is relied upon in Findings of Fact 18, 24, 25 and 26.

The Houben-Weyl publication (Exhibit P) and Hormuth brochure (Exhibit Q) are relied upon in Finding of Fact 19.

The prior public use of the Hormuth rotary evaporator is relied upon in Finding of Fact 20.

The pertinence of these prior art patents, publications and uses have already been discussed. The trial court was clearly correct in Finding of Fact 28 (T. 56) that:

“The Craig publication (Exhibit D), the Hormuth rotary evaporator (Exhibits P, Q and R, and the use thereof at Ohio State University) and the Birchall patent No. 2,876,985 (also advertisements thereof, Exhibits S and T) were not considered by the Patent Office during the prosecution of the patent in suit, and are much more pertinent than the prior art which was considered by the Patent Office.”

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**PLAINTIFFS' PATENTED DEVICE WAS IN PRIOR PUBLIC USE  
AT THE UNIVERSITY OF CALIFORNIA.**

The court held that plaintiffs' rotary evaporator had been in public use at the University of California more than one year prior to the August 11, 1961 filing date of the application for the patent in suit. (Findings of Fact 29, 30, 31 and 32, T. 56.)

Plaintiffs challenge this holding on the basis of this Court's decision in *Cataphote Corporation v. De Soto*

*Chemical Coatings Inc.*, 356 F.2d 24 (9th Cir., 1966), *Tool Research v. Honcor*, 367 F.2d 449 (9th Cir., 1966), and *Super Mold v. Clapps Equipment*, 397 F.2d 932, 158 USPQ 527 (9th Cir., 1968), wherein patents were held invalid under 35 U.S.C. 102(b). Plaintiffs state at page 23 of their opening brief:

“\* \* \* In each instance there was substantial proof of prior public *commercialization* to support the findings. Here there is none \* \* \*”

By inference plaintiffs seem to suggest that there can be no prior public use unless such use was commercial. If this is their position, it is just as incorrect as their understanding of the applicability of the prior art.

The leading case on this point is *Egbert v. Lippmann*, 104 U.S. 333, 26 L. Ed. 755 (1881), wherein the inventor of a corset spring made a gift of the device to a friend who used it for several years before the inventor applied for his patent. This was held to be a public use and invalidated the patent.

“We remark, secondly, that, whether the use of an invention is public or private, does not necessarily depend upon the number of persons to whom its use is known. If an inventor, having made his device, gives or sells it to another, to be used by the donee or vendee, without limitation or restriction, or injunction of secrecy, and is so used, such use is public, within the meaning of the statute, even though the use and knowledge of the use may be confined to one person.”

*Tool Research and Engineering Corp. v. Honcor Corp.*, 367 F.2d 449 (9th Cir., 1966.)

“\* \* \* One sale or gift of an article is sufficient to constitute a sale or public use. \* \* \*”

In *Randolph v. Allis-Chalmers Mfg. Co.*, 264 F.2d 533 (7th Cir., 1959), a mechanic for Pure Oil Company made and installed resilient seats on tractors owned by Pure Oil, which tractors were then used by Pure Oil without limitation or restriction and with the approval and full knowledge of the mechanic. More than two years later (the statutory period then), the mechanic filed an application for patent on the resilient seats. It was held that there was a prior public use by Pure Oil of the invention and the patent was invalidated.

Plaintiffs also attack the holding below of prior public use on the basis that the use of the invention at the University of California was merely experimental within the meaning of *Elizabeth v. Pavement Co.*, 97 U.S. 126; 24 L.Ed. 1007 (1877).

A review of the evidence in the present case shows clearly that plaintiffs' rotary evaporator was in prior public use and that such use was not experimental.

Plaintiffs' rotary evaporator with its Teflon shaft was first conceived by them sometime in early 1958.

Pursuant to a request by Dr. Hamlow, a rotary evaporator using a Teflon shaft was built at the University of California in Berkeley in April, 1958 (R. 31), but this particular device was not successful. (R. 32.)

In May, 1958, another device was built at the University of California (R. 35) which embodied all of the elements of the claim of the patent in suit. (R. 39.) This device was tested and the results were "very satisfactory and very exciting." (R. 35.)

Dr. Hamlow put it to use in his research work (R. 94), which he was performing towards his thesis (R. 96), and it satisfactorily performed the functions required by his research. (R. 40.)

Another model of the same design was built a year later in April, 1959, because plaintiffs wanted to see if it would perform as well as the previous one. It did (R. 40-41), and Dr. Hamlow continued to use both in his research. The earlier device has been in continuous use, and was still in use at the time of the trial (R. 91).

The door to Dr. Hamlow's laboratory was kept locked, but graduate students had keys and access to the laboratory. (R. 93.)

In the two years from May, 1958, these rotary evaporators proved very satisfactory for Dr. Hamlow's work. (R. 96.)

Some time prior to March, 1960, Dr. Hamlow described the rotary evaporator to Dr. Rapoport's seminar group of 12 graduate students (R. 94) and there was an interest and anxiety on their part to acquire these instruments for their use (R. 94). There was no injunction to secrecy given to these students about the rotary evaporator.

Following the seminar, Dr. Rapoport decided to have more of these devices made and given to more distant graduate students to give the devices the worst experimental tests in their laboratory work that could be conceived. (R. 42-43.)

Forty-nine more rotary evaporators were made and completed by March 9, 1960. (R. 98.) Dr. Rapoport told the graduate group that the evaporators were now avail-

able for distribution and that anybody who wanted one could come and get one to use in their work. (R. 99.) The students were to report to Dr. Rapoport at the end of the month as to their operation. (R. 43.) The students began to use these evaporators in April, 1960. (R. 99.)

By the end of the month Dr. Rapoport spoke specifically to these students, and none of them reported that they were unsatisfactory. (R. 99.)

After the end of the tests, Dr. Rapoport concluded that “\* \* \* this was it. We had in our hands the best rotary evaporator that was around. With such an impressive instrument, the decision was that we should go ahead and make it available to others doing chemical research as well.” (R. 44.)

Practically all of the evaporators given out to these students have been in continuous use up to the time of trial. (R. 91-92.)

Drs. Hamlow and Rapoport set up Chemquip Company to sell these rotary evaporators, with the first sale being made to Stanford University in November, 1960. (R. 46-47.)

The present commercial model of plaintiffs is essentially the same as the forty-nine devices given to the students, except that it is a “slicker model”, “painted and parts have been covered so that they are not exposed. The working principle and the working parts are essentially the same.” (R. 44.)

The application was filed on August 11, 1961, over 15 months after the forty-nine rotary evaporators were distributed to the students for their use.

Under these facts it is plain that the use of the forty-nine rotary evaporators by the graduate students at the University of California was a "prior public use" under the meaning of 35 U.S.C. § 102(b).

Plaintiffs, however, contend that the use of these devices by the graduate students was merely "experimental" until some time after the critical date August 11, 1960 (one year before the application was filed). At this point we should bring out that the rotary evaporators were used by the graduate students in their regular experiments, just as plaintiffs' commercial devices are used in laboratory experiments. The "experimental" use allowed under § 102(b) means such use as is made with an end towards perfecting the invention or towards an ascertainment of whether the invention has been perfected. Once these have been established, further use is not "experimental."

Taking the evidence as favorably to plaintiffs as possible, any "experimental" use of the invention ended one month after the forty-nine rotary evaporators were distributed to the students, and put into use in April 1960, for it was by this time that they all reported to Dr. Rapoport that the evaporators were satisfactory. The continued use of the evaporators by the students was clearly public use thereof.

Looking at the evidence more realistically, Dr. Hamlow had been using the rotary evaporators in his own research for about two years from May 1958 and they proved very satisfactory for his work. (R. 96.) After this long usage, 49 of the devices were made and distributed to the students to use in their work. It is hard to believe

that plaintiffs would commit the University to the expenditure necessary to make 49 rotary evaporators if plaintiffs were not satisfied that these devices would work as well as they had up to that time.

It should also be borne in mind that these devices are not complicated. They have a rotating Teflon shaft, a glass flask at one end and a fixed glass member at the other. Some time may be required to see if such a device will work, but it is difficult to see that more than the two years' use by Dr. Hamlow was required for this purpose. Particularly is this so in view of the fact that the original 1958 design was never changed and was still in use at the time of trial.

The record fully supports the finding that the 49 rotary evaporators were in public use before August 11, 1960.

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#### **THERE IS NO INFRINGEMENT IN THE PRESENT CASE.**

Throughout their opening brief (at pages 10, 14, 32 and 33), plaintiffs charge Dr. Dreiding's firm with producing its "Vapsilator" as a "Chinese copy" of the structure and combination of elements of the claim in suit. There is no basis for this accusation of copying. In plaintiffs' opening statement it was stated (R. 8):

"Now, the defendants in making the Vapsilator one has to admit that they are a person skilled in this art. Instead of copying and following the teachings of the prior art, they followed the teachings and copied plaintiffs' device. I think that we can readily show that they were not following the prior art but following what we taught."

Towards the end of the trial, the Court remarked (R. 340):

“There is no cloud on the record because of the opening statement because there is no evidence of copying at least to this point of trial.”

No evidence of copying was later introduced by plaintiffs. Instead, plaintiffs put into evidence an agreement dated September 4, 1966 wherein defendants were to be the distributors in this country of the accused Vapsilator (Exhibit 16.) This agreement was in existence before the patent in suit ever issued. The existence of the accused Vapsilator prior to the issuance of the patent certainly refutes plaintiffs' charges of copying.

On the question of infringement, the Court found as follows (Findings of Fact 33, 34 and 35, T. 57):

“33. The accused ‘Vapsilator’ device is advertised for use with a recommendation that a thin film of silicone lubricant be used at the Teflon-glass ball joint. Such recommendation is made to help eliminate the production of Teflon shavings that are produced in a rotary Teflon-glass ball joint which Teflon shavings can result in contamination of the products in or passing through the device.

“34. There was no evidence of any use of the accused ‘Vapsilator’ device in the United States without the use of the recommended thin film of silicone lubricant.

“35. The accused ‘Vapsilator’ when used with the recommended thin film of silicone lubricant has a ball joint which is not self-lubricating and is thus substantially different in manner of operation and result achieved as compared to the apparatus claimed by the claim of the patent in suit.”

These are findings of fact, and thus the "clearly erroneous" rule applies, F.R.C.P. 52(a).

The evidence is undisputed that the accused "Vapsilator" device is advertised for use with a recommendation that a thin film of silicone lubricant be used at the Teflon-glass ball joint. (Exhibit 2.) There is no evidence that it was ever used in the United States without the use of the recommended thin film of silicone lubricant.

Dr. Rapoport testified that if a thin layer of silicone lubricant is used at the ball joint of the accused device there would be contamination of the product passing through the device (R. 114), and if it could only be so used it would not be in accordance with plaintiffs' invention (R. 115). If the accused device is used with lubricant, Dr. Rapoport didn't know whether it would come within the scope of the invention. (R. 116.)

The findings of fact are not clearly erroneous and fully support the judgment of non-infringement.

Additionally, even though the court below declined to pass upon the point, there is another ground for non-infringement in this case.

The claim requires that there be "a source of low pressure" to which the exhaust means is connected. In other words, "a source of low pressure" is an element in the claim.

Although the accused device is intended to be used with a source of low pressure, there is no testimony or evidence that the accused device was sold by plaintiffs or anyone else with a source of low pressure, or that the accused device was ever used with a source of low pres-

sure. As a consequence, there is no proof whatsoever that the claim has been directly infringed. *Nelson v. Batson*, 322 F.2d 132 (9th Cir., 1963.)

35 U.S.C. 271(c) provides that a seller of a device constituting a material part of the invention, knowing the same to be especially made for use in an infringement of the patent, shall be liable as a contributory infringer. Even if it be assumed that the provisions of 35 U.S.C. 271(c) apply here, it is well established that "there can be no contributory infringement in the absence of a direct infringement." *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 341 (1961).

Since no direct infringement has been proven in the present case, defendants' sales of the accused device cannot be acts of contributory infringement. Plaintiffs will probably contend that this is quibbling on defendants' part, but the burden of proof was on plaintiffs to prove infringement. This they have not done.

The same is true with respect to "inducement" of infringement under 35 U.S.C. 271(b). There can be no liability for inducing infringement unless there has been an infringement. *Aluminum Extrusion Company v. Soule Steel Company*, 260 F.Supp. 221, 224 (D.C. C.D. Calif., 1966.)

**CONCLUSION**

The judgment below is well founded both in fact and in law and should be affirmed in all regards.

Dated, San Francisco, California,

December 3, 1968.

Respectfully submitted,

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